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JOURNAL OF

THE NEW ENGLAND BOTANICAL CLUB

Vol. 12. November, 1910. No. 143.

THE VARIATIONS OF LONICERA CAERULEA IN EASTERN AMERICA.

M. L. FERNALD and K. M. WIEGAND.

As recently pointed out by Mr. Alfred Rehder in his *Synopsis of the Genus Lonicera*,[1] the American *Lonicera caerulea* differs from the plant of the Old World in several rather pronounced characters: "Winter buds upright and the branches generally spreading at an angle of less than 45°; corolla usually campanulate and glabrous, tube as long as or shorter than limb; . . . . accessory buds and stipular appendages wanting," while the Eurasian shrubs have "Winter buds more or less spreading and the branches diverging generally at an angle of more than 45°; tube of the generally funnel-form corolla usually longer than limb, mostly pilose without; stipular appendages and accessory buds often present." Of the Eurasian shrub several rather pronounced varieties (with numerous forms) are maintained, but all the American material is treated by Mr. Rehder as var. *villosa* (Michx.) T. & G., though with the qualification: "In regard to the pubescence the American plant seems nearly as variable as that of the Old World."

While collecting in western Newfoundland the writers were impressed by the very different appearance of two extremes of the species as found there, and upon further study of the question feel that the two should be distinguished as varieties. In one the leaves (above as well as beneath), new shoots, and sometimes the old bark are densely pilose or short-villous; in the other the leaves are sparingly pilose or glabrate, and the new shoots sparingly pilose or puberulent at tip but usually glabrous or glabrate below. As far as the herbarium material shows, the more pubescent extreme is confined to the northeastern section of the continent,— from Labrador and Ungava to Lake Winnipeg, south to northern New England and Wisconsin,— and does not extend in its extreme development so far south as the smoother form. This very pubescent variety is without question the *Xylosteum villosum* of Michaux,[1] upon which Torrey & Gray based their *Lonicera cœrulea*, var. *villosa*.[2] In the original description Michaux characterizes the shrub as "X. ramis villosis: foliis. . . . utrinque subtomentoso-villosissimis," and upon examination of the Michaux type by one of the writers [3] the following note was made: "Most *extremely* pubescent form from 'Lac des Cygnes [one of the sources of Mistassini River, Saguenay Co., Quebec], Mistassin et Riv. des Goelands." [4] This variety has received a second name, var. *canadensis* Delamare, Renault & Cardot,[5] ascribed by its authors to Lamarck, who seems not to have published such a combination, and based upon *Xylosteum Solonis* Eaton.[6] This *X. Solonis*, based by Eaton upon material "found on the White Mountains (N. H.) by Dr. D. Solon," was described as having "villose" leaves, and since true var. *villosa* is well known from the White Mountain region there is little question that *Xylosteum villosum* Michx. and *X. Solonis* Eaton are the same. So far as the writers have been able to discover, the widely distributed American shrub with glabrous or glabrate twigs has received no name and is here proposed as

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[1] 14th. Ann. Rep. Missouri Bot. Gard. 69, 73 (1903).

Lonicera caerulea L., var. **calvescens** n. var., a var. *villosa* recedit foliis tenuiter pilosis vel glabratis, ramis novellis glabris vel tantum puberulis vel tenuiter pilosis demum glabratis.

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[1] Michx. Fl. i. 106 (1803).

[2] T. & G. Fl. ii. 9 (1841).

[3] The Michaux Herbarium was studied by Mr. Fernald during the summer of 1903.

[4] Rivière des Goelands was Michaux's name for one of the branches of Rupert River, in southwestern Ungava. In Michaux's Journal for September 11, 1792, he says: "Il est très évident que le Pays situé entre le Lac des Cygnes et le Lac Mistassin est le plus élevé, car le Lac Mistassin se décharge dans la Baye d'Hudson par la riv. des Nids de Goelands qui coule au N. Ouest et le Lac des Cygnes se décharge dans le Fleuve Snt. Laurent par la riv. Mistassin, par le Lac Snt. Jean, par la riv. Chicoutoumé et enfin par la riv. Seganay jusqu'au Tadoussack ou elle rencontre le fl. St. Laurent. C'est avec difficulté que je nomme Rivièrre Mistassin la riv. que coule depuis le Lac des Cygnes jusqu' au Lac St. Jean. J'ay fait cette observation aux Canadiens qui vont traiter dans ce Pays avec Sauvages. Ils m'ont dit que l'on croyoit autrefois que l'on pouvoit remonter cette rivièrre jusqu'au lac Mistassin et que c'est pour cette raison qu'elle a été ainsi nommé par les Missionnaires Jesuites" — Journal of André Michaux, 1787–1796, ed. C. S. Sargent (Proc. Am. Phil. Soc. xxvi. no. 129) p. 85 (1888).

[5] Delamare, Renauld & Cardot, Fl. de l'ile Miquelon, 21 (1888).

[6] Eaton, Man. 26 (1817).

Resembling var. *villosa* but with the leaves only sparingly pilose or glabrate; the new twigs glabrous or merely puberulent or sparingly pilose, becoming glabrate.— Newfoundland to Ontario, south to Connecticut and Pennsylvania.[1] Type: swale, Goose Pond, Newfoundland, July 9, 1910 (*Fernald & Wiegand*, no. 4051, type-specimen in Gray Herb.). Among many other specimens examined the following are characteristic. NEWFOUNDLAND: moor, Whitbourne, August 16, 1894 (*Robinson & Schrenk*, no. 11). QUEBEC: Seven Islands, Saguenay Co., August 3, 1907 (*C. B. Robinson*, no. 688). NEW BRUNSWICK: Grand Manan, 1902 (*W. G. Farlow*). NOVA SCOTIA: dry fields, Truemanville, May, 1883 (*H. Trueman*). MAINE: shelves at 4000–4500 ft., west wall of North Basin, Mt. Katahdin, July 13, 1900 (*Fernald*). NEW HAMPSHIRE: Alpine Garden and Oakes' Gulf, White Mts., June 23 and 29, 1898 (*J. M. Greenman*, nos. 1076 and 1075); sphagnum bog, Jaffrey, August 29, 1898 (*B. L. Robinson*, no. 598). VERMONT: Willoughby, June 9, 1895 (*G. G. Kennedy*). MASSACHUSETTS: clearing in low woods, Walpole, May 19, 1897 (*W. P. Rich*), June 17, 1908 (*J. R. Churchill*). RHODE ISLAND: swampy meadow, North Smithfield, May 30, 1900 (*E. B. Chamberlain*, no. 129). CONNECTICUT: swamp, Killingly, July 2, 1903 (*C. H. Knowlton*); border of Great Cedar Swamp, Voluntown, June 17, 1899 (*C. B. Graves*). PENNSYLVANIA: Naomi Pines, Monroe Co., June 7–10, 1889 (*J. K. Small*). ONTARIO: Mer Bleue, near Ottawa, June 1, 1905 (*Macoun*, Herb. Geol. Surv. Can., no. 66, 467).

THE PASTURE-THISTLES, EAST AND WEST.

E. J. HILL.

IN the summer of 1909 I had an opportunity to examine for the first time in the field the eastern pasture thistle, *Cirsium pumilum* (Nutt.) Spreng., and to compare it with its nearest western relative, *C. Hillii* (Canby) Fernald, the only one of the two species which I have as yet seen in the vicinity of Chicago. The plants of *C. pumilum* were growing quite abundantly on a gravelly hillside pasture that sloped down to French Creek, just below the village of Saegertown, in northwestern Pennsylvania. The time of finding, Aug. 31st, being near the close of its floral season, only a few plants remained in flower, though an occasional bud was seen. The greater part, however, were in seed, or, having lost their fruit, were drying up or dying, having accomplished their work as biennial plants. But the most surprising fact was that some of them were still in flower, a few even in bud, indicating a season not yet completed, in marked contrast with the familiar form (*C. Hillii*) at home. For in the neighborhood of Chicago, whether growing in the prairie or in the open parts of the dune region, *C. Hillii* is virtually out of flower by the 25th of July. Most of the plants at this date have already lost their seed, and by the first of August the stems are generally withered and dry. I have found it in flower as early as the 20th of June, and its season may be considered as lasting about six weeks, from the middle of June to the first of August, the plants being at their best during the first ten days of July. As contrasted with that of *C. pumilum*, July–Sept., its season is June–July. It comes into bloom a little later than *C. Pitcheri* (Torr.) T. & G., the earliest thistle to flower here. As the latter is almost confined to dunes close by the shore of Lake Michigan in our region, where the coolness of the water of the lake commonly retards the shore-plants a week or more beyond the time when the same species blossom farther away from the shore, this also is to be taken into account for the earliness of *C. Pitcheri*. I have collected it in flower as early as June 12th. It may also be found with flowers the first part of August, new branches or shoots having started from a stem or root that carries withered or dried stems at the same time. Its season is therefore longer than that of *C. Hillii*, the duration about the same as that of *C. pumilum*, but with an earlier beginning and closing.

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[1] Var. *calvescens* may occur in northwestern America but the material at hand is inadequate for definite determination of that point, and, as already indicated by Gray (*Bot. Cal.*), Rehder, and others, seems to differ in some regards from the eastern varieties.

Another contrast between the two pasture-thistles, as I found them, is the more branching and somewhat taller habit of *C. pumilum*, and the resulting presence of a greater number of heads on the same individual. One commonly sees no more than three heads on a plant of *C. Hillii*. It often produces but a single large head crowning an unbranched stem 15 to 20 inches high. Occasionally five heads may be found on a more vigorous plant, or even more, particularly when the terminal bud of the main stem has been injured and branches are forced out from below. Nor is it so strongly armed as the eastern pasture-thistle, the prickles usually being weak.

But one of the chief distinctions lies in the roots of the two. This fact too often escapes attention, it obviously being more convenient in collecting the plant to cut it off rather than to dig it up entire. The specimens of thistle at Saegertown had a tap root, more or less branching or with smaller side roots, the main root tapering downward as properly in a tap root. The roots of *C. Hillii* are fusiform, usually hollow, and connected by a narrow neck-like part with the base of the stem. Sometimes several spring from the base forming an imperfect fascicle, each connected with the stem by a slender neck. I have found as many as five of these to a single stem. An individual with three is figured in the proceedings of the Davenport Academy of Sciences, **8**: 287, Pl. 2, 1900. When single the root is generally perpendicular and runs deeply down, so that it is difficult if not impossible to pull it up, since the narrower neck almost invariably breaks off leaving the most characteristic portion in the ground. The plant being a perennial these several stems may be the product of different years, one of them being commonly longer and larger than the rest. As the bud for a succeeding year's growth forms a little beneath the surface, it would be advantageous to send down a new subterranean part to aid in perpetuating the plant.

Though the flowers of *C. Hillii* are normally of a deep shade of pink-purple, they sometimes take on a brighter shade of red or become red-purple, or magenta-like. In such cases a large head two or three inches across becomes very ornamental in character. The bracts of the involucre in this western thistle are very glutinous on account of a dark gland near the tip. But I found on the bracts of the pasture thistle (*C. pumilum*) at Saegertown a more glutinous line than might be inferred from the common descriptions, the bracts being sticky enough to adhere with considerable force to the drying papers and tear off bits of the latter when removed.

The habitat of *C. Hillii* is a dryish soil. It comes under Warming's classification of mesophytic plants, an inhabitant of prairies, meadows and pastures, but with a tendency towards the drier extreme. My first collection of the plant, near the Kankakee river at Waldron, Ill., June, 1870, is labelled as from "dry fields." It was then confounded with *C. pumilum*, as our only pasture thistle. So too at first in the sand region east of Chicago where its distinctness was subsequently observed. It was on the low sand ridges that run somewhat parallel with one another on the old lake bottom, raised but a few feet above adjoining sloughs or ponds, only slightly above the present level of

Lake Michigan. These low sand ridges of beach and shore deposits bear a scattered growth of pines and oaks, and are sufficiently open and sunny to admit a number of the plants common to the drier prairies beyond the limits of the old lake basin. It is these low ridges that characterize the western part of the sand region. In the dune region proper, where the surface is broken by high sand hills enclosing ponds or shallow depressions of moister ground, I have never met with an example of this thistle. This dune area lies mainly east of the new city of Gary, and as the region west of this place is largely used for factories of various kinds and cut up by a network of railroads and switches, the thistle here is likely soon to become extinct. But it fares better south and west of Chicago in the prairie region, where it still occurs in the more rolling parts of pastures and meadows, or in lower sand areas of the drift formation, particularly in railway enclosures fenced off from the surrounding prairie before the land had been touched by the plow. Here it is one of the few native denizens of the prairie that seem able to compete with an introduced vegetation. It may return again to ground from which it had been excluded by cultivation, when this is seeded down for a time for pasture or meadow, and left a few years untilled. It is greatly helped in this by its copious plumose pappus for the wind dispersion of its seeds. It has the additional advantage of early fruiting, some of its seeds maturing in a meadow before the grass may be cut. It thus takes on the character of a pasture or meadow thistle, and grows successfully beside the white and the red clover, timothy, and the most common meadow and pasture grasses of drier grounds, *Poa pratensis* and *P. compressa*.

CHICAGO, ILLINOIS.

NOTE ON DESMODIUM CANESCENS AND HYOSCYAMUS NIGER.

WALTER DEANE.

I HAVE read with much interest Prof. M. L. Fernald's Notes from the Phaenogamic Herbarium of the New England Botanical Club,—I, in RHODORA for September, 1910, and succeeding Notes will be most welcome. They give definiteness to the records and they will stimulate a search in the field and herbarium for new stations for plants cited.

Desmodium canescens (L.) DC. grows freely on the southeastern slope of Prospect Hill, Waltham, Massachusetts. Mr. Henry A. Purdie, an enthusiastic observer of our local flora, showed me the location on August 13, 1910. The plant grows in dense patches some 4 meters in diameter and 1.1 meters in height in dry, more or less rocky soil. The large ovate leaflets are very handsome, and on examination show the large persistent, ovate, pointed stipules. The flowering period was nearly past and the young fruit was beginning to appear. The robust and vigorous rootstocks ensure the continuance of the species if the perhaps necessarily heroic treatment of the Park Commissioners does not destroy it. The low growth had been cut off on the hill-side some time before, as was shown by the mutilated tips of many of the plants which had, nevertheless, sent up a fresh supply of stems.

This species, rare in eastern Massachusetts, was growing in company with several of its near relatives, which covered the ground under the light foliage of the trees and in more open spaces. Indeed, I never saw such a display of Desmodium, and the blending of so many species on the beautiful hill-slope amid the glancing shadows was an exquisite sight. *Desmodium rotundifolium* (Michx.) DC. grew in dense patches from 12 to 20 decimeters across, close to the ground. *D. Dillenii* Darl. was very abundant in flower, while *D. paniculatum* (L.) DC. was in large continuous areas, making a fine display with its glossy foliage and brilliant flowers. *D. rigidum* (Ell.) DC. was represented by a single clump near the entrance to the park, and *D. marilandicum* (L.) DC. was extremely abundant and nearly past flower. Other species would doubtless have rewarded a longer search. Specimens of *D. canescens* are in my herbarium.

An examination of my collection shows a specimen of *Hyoscyamus niger* L. that I collected on my father's place on Sparks St., Cambridge, Massachusetts, in 1888. It was growing spontaneously in the garden as a weed, and, on September 2, I took from it a specimen in flower and young fruit, besides pressing and pocketing dissected flowers. Later, on November 14, I took the remainder of the plant in full fruit with ripe seeds. The tap root is forked, and is 4.1 decimeters in length. I did not quite reach the tip.

CAMBRIDGE, MASSACHUSETTS.

SOME ADDITIONS TO THE RHODE ISLAND FLORA.

M. L. Fernald.

No well settled area of New England, except perhaps New Hampshire (outside the White Mountain and Monadnock areas), has a more meagre representation in the larger herbaria than Rhode Island. Members of the New England Botanical Club, who have spent much time in preparing the Check Lists of various groups, have experienced great difficulty in finding satisfactory evidence of the occurrence in these states of many of the widely distributed species. It is therefore desirable that whenever opportunity offers collections from these states be made and placed in the Club Herbarium or in other public or semi-public collections. On June 19 last the writer, while spending the day at Buttonwoods Beach in Warwick, Rhode Island, was impressed with the number of plants which might prove of interest to students of plant-distribution; but as he was not equipped to preserve specimens at that time delayed the gathering of most species until the following Saturday, June 25, when with Mrs. Fernald he made a half day's collecting trip from Warwick Station (electric) to Buttonwoods. The region is in the sandy flat coastal belt and the vegetation is very typical of such areas, so that no detailed account of the flora is called for; but in labeling the specimens collected the writer finds that thirteen of them are of species or varieties which have not been previously recorded from Rhode Island, or at most have been included without statement of locality in general manuals or similar works. These plants are here noted not because of their rarity but that records of their occurrence in the state may be accessible to future workers.

Panicum dichotomum L. Oak woods, Buttonwoods.

Panicum Lindheimeri Nash. Sterile meadow near the border of a salt marsh, Warwick.

Juncus dichotomus Ell., var. platyphyllus Wiegand. Sandy thicket, Warwick.

Sisyrinchium gramineum Curtis. Abundant in meadows at the edge of a salt marsh, Warwick, the flowers much deeper blue-purple than in the following.

Sisyrinchium atlanticum Bicknell. With the preceding. Represented in the herbarium of the New England Botanical Club by specimens from Cranston (*Collins*) and from a salt meadow, Middletown (*B. L. Robinson*).

CERASTIUM SEMIDECANDRUM L. Abundant in sandy fields near Buttonwoods Beach. Previously recorded in New England only from East Lyme, Connecticut (*Graves*, RHODORA, iii. 65), but represented in the Gray Herbarium by characteristic material collected by Judge J. R. Churchill at "Asyllum," Nantucket, May 28, 1904.

× FRAGARIA GRANDIFLORA Ehrh. The commonly cultivated Strawberry is abundantly established on the railroad embankment near Buttonwoods station. It was found by J. F. Collins and the writer in a similar habitat at Elmwood, May 18, 1898.

× LYSIMACHIA PRODUCTA (Gray) Fernald. Abundant in a boggy meadow, Warwick. The only member of the genus noticed.

APOCYNUM CANNABINUM L., var. PUBESCENS (R. Br.) DC. Sandy thicket back of Buttonwoods Beach. Represented in the Gray Herbarium by a specimen collected by Olney at Smithfield, July 23, 1845.

SCROPHULARIA LEPORELLA Bicknell. Gravelly banks near Buttonwoods station.

GALIUM CLAYTONI Michx. Boggy meadow, Warwick.

CARDUUS ACANTHOIDES L. Abundant in gravel along the electric railway from Warwick station to Buttonwoods, and presumably beyond in each direction. Collected by J. F. Collins in 1895 on "cove lands," Providence.

HYPOCHAERIS RADICATA L. Sandy grassland, Warwick, a few plants only. Already established near New Bedford and at other scattered points on the Atlantic coast and likely to become a troublesome weed.

GRAY HERBARIUM.

PINUS RESINOSA IN NORWOOD, MASSACHUSETTS.— Two or three years ago while riding on the Midland Division of the N. Y. N. H. & H. Railroad, I noticed from the car window a pine tree which seemed to be *Pinus resinosa* Ait. It stands apart from the other pines in a pasture between Ellis Station and Norwood, on the eastern side of the track. Although I saw the tree several times from the train, I was unable to identify it absolutely until this year, May 14, 1910.

On that date I went to the tree and secured specimens. The local flora committee received reports of this species from several scattered stations as far south as Chestnut Hill, Brookline, so this new station extends the range several miles southward.— Clarence H. Knowlton, Hingham, Massachusetts.

Note on Juniperus horizontalis and J. virginiana.— While engaged recently in the preparation of a key to the New England junipers, I noticed that besides the differences between *Juniperus horizontalis* Moench and *J. virginiana* L. emphasized in Gray's Manual, other characters of some value in the separation of these species are afforded by the fruit. In the Gray Herbarium material, which I examined with Prof. Fernald, it was found that the fruits of *J. horizontalis* contained generally four seeds, rarely three or five, when mature chestnut-brown and roughened. *J. virginiana*, on the other hand, had fruits with one or (usually) two seeds, very rarely three, rather pale ashy-brown and smooth at maturity. The representation of mature-fruited *J. virginiana* at hand being rather scanty, I dissected 66 of the berries, collected in Stoughton, finding 52 with but one well-developed seed each, and only 14 with two, reversing the proportions we had been led to expect from the study of the Herbarium material. This latter, however, coming as it does from widely separated localities, probably more truly represents the normal numerical tendencies of the *J. virginiana* fruits.— Sidney F. Blake, Stoughton, Massachusetts.

The North American Species of Panicum.— Possibly no monograph of similar scope in American taxonomic literature represents a more intensive and critical study than Hitchcock and Chase's treatment of Panicum,[1] which has just appeared from the Government Printing Office. By extensive field-work, continued through several seasons, both authors have obtained first-hand knowledge of nearly every species which reaches the United States, and of many Mexican and West Indian species. Their field-work has been supplemented by green-house cultures, in order to establish beyond doubt the identity of the vernal and autumnal phases of many species, and by a thorough study of most of the Panicum material in European and American herbaria. In the extent to which Hitchcock and Chase have borrowed and determined the collections belonging to smaller institutions and to individuals, they have set an example which other monographers may well follow. Few professional botanists have any idea of the stimulus which can thus be given to botanical collecting and exploration.

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[1] The North American Species of Panicum, by A. S. Hitchcock and Agnes Chase. Contributions from the United States National Herbarium, XV, Washington, 22 Oct. 1910.

The monograph covers all America north of Panama, including the West Indies. In this area the authors recognize 205 species and subspecies, although they exclude from Panicum a number of outlying groups, which are better treated as generically distinct. It gives one faith in the serviceability of the authors' species-concept to know that they have been able to place, definitely, with no evasion and no side-tracking, a mass of material numbering many thousands of sheets. Yet the work contains only 16 new species and subspecies. To most botanists the treatment might have been made a trifle more satisfactory if certain varieties and forms, which are informally defined, with citation of specimens, had been named instead of treated as "exceptional specimens."

A feature which deserves the highest praise is the full discussion, under each species, of the synonyms which are referred to it. Prof. Hitchcock has studied practically every extant specimen of American Panicum, which has ever been designated as a type, or can be construed as a type. The result is a surprisingly short list of "Doubtful Species" and a critical commentary on the synonymy which will be of great use to future students. In this connection it may be noted that misapplied names (*i. e.*, published errors in determination) are given no nomenclatorial standing.

The description of each species is accompanied by two text-figures, an enlarged spikelet and a map showing, roughly, the geographic range in the United States. In nearly every case the spikelets have been drawn from type or authentic material, and are thus of permanent value as standards for comparison, regardless of what difference of opinion may ever arise in regard to the delimitation of groups or the identity of particular specimens. It is unfortunate that the presswork at the Government Printing Office was not of a high enough order to make the most of Mrs. Chase's beautiful figures. The maps are not as useful as they would have been if the dots had always been placed so as to indicate precise localities. A dot placed in the center of a state is used frequently to indicate a general distribution of the species in that state.

In the citation of specimens the authors have been unusually liberal. They have not only cited specimens under each species, to show the geographic range, but they have also prepared an index to numbered specimens which will prove one of the best features of the book.

The treatment of the dichotomous Panica (under the newly named subgenus Dichanthelium Hitchcock & Chase) is painstaking in the extreme. There is a key to the 17 sections of the subgenus with page references to sectional keys, which are introduced at the appropriate places in the text. In addition, there is an artificial key to the whole subgenus, in which the species are not retained in taxonomic sequence.

The authors have followed the "American" code of nomenclature. In a few cases specific names are used which would not be authorized by the Vienna Code. An interesting example is that of *Panicum polyanthes*, a name justified by the "American" rules but not by the Vienna rules (although it has crept into Gray's Manual, ed. 7!) The valid name is *Panicum multiflorum* Ell. 1816. *Panicum multiflorum* Poir. 1816 is *P. dichotomiflorum* Mx.

Hitchcock and Chase have given us a book of enduring worth,— a book which it is a pleasure to own and which it will be a greater pleasure to use.— H. H. BARTLETT, Bureau of Plant Industry, Washington, D. C.

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